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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,968	04/15/2004	Lawrence C. Lee	ADNAS 04.002	8220
48008	7590	02/04/2011	EXAMINER	
KERR IP GROUP, LLC			JOLLEY, KIRSTEN	
MICHAEL A. KERR				
P.O. Box 18600			ART UNIT	PAPER NUMBER
RENO, NV 89511			1715	
			NOTIFICATION DATE	DELIVERY MODE
			02/04/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/825,968	Applicant(s) LEE ET AL.	
	Examiner Kirsten C. Jolley	Art Unit 1715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2010 and 28 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 28-36,38,40 and 44-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27,37,39,41-43 and 54-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/16/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on November 24, 2010 and December 28, 2011 have been entered.

Response to Arguments

2. Applicant's arguments filed December 28, 2011 have been fully considered but they are not persuasive.

Applicant argues that the Examiner readily equates the fibers of paper to the fibers of a textile. Applicant argues that paper fibers are very different than textile fibers in their physical characteristics, and thus adhering or attaching the marker to the textile would be quite different. The Examiner notes that WO '548 teaches that the biochemical marker may be incorporated into fibers made by spinning such as viscose or extrusion such as polyamide or polypropylene (paragraph [0016]). It is noted that Merriam-Webster's Collegiate Dictionary, Tenth Edition, defines "viscose" as "a viscous golden-brown solution made by treating cellulose with caustic alkali solution and carbon disulfide and used in making rayon and films of regenerated cellulose," and "rayon" as "any of a group of smooth textile fibers made from regenerated

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cellulose by extrusion through minute holes [emphasis added]” Thus it is the Examiner’s position that viscose meets the claim limitation of a “textile fiber material,” as well as does polypropylene since it is well known that polypropylene is used in preparing textiles. Since rayon is a material specifically mentioned in Applicant's specification, it is the Examiner's position that the nucleic acid marker would adhere to the fiber materials similarly.

Applicant argues that WO ‘548 uses large marked particles, large enough to see under a microscope, which is not useful when manufacturing a covert textile article, or the inclusion of microsphere “bodies.” The Examiner notes that the size of marked particles is not claimed, nor does the broad “comprising” language exclude use of additional materials. Further, WO ‘548’s invention is similarly used for the authentication and identification of security documents.

Applicant argues that WO ‘548 does not teach how to manufacture a textile fabric with the nucleic acid marker incorporated within the fabric. The Examiner notes that a step for manufacturing a textile is not claimed. Further, it would have been within the skill of an ordinary artisan to have determined how to include a marked fiber into a fabric. WO ‘548 does not disclose the need for special treatment of its fibers after production.

Applicant argues that textile fabrics have a long length to width ratio while paper fibers are much shorter making it difficult to weave or fabricate a textile like fabric. the fibrous textile material of WO ‘548 may have a mean length of 5 mm and diameter of 25 micrometers (paragraph [0063]), which meets the limitation of a "high length to width ratio.” Additionally, it is noted, as discussed above, that WO ‘548 teaches use of viscose and polypropylene fibers which are made by spinning or extrusion, and such fibers are also well known for making fabrics. It is further noted that rayon, a textile fiber, is made from regenerated cellulose.

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Applicant argues that WO '548 does not teach or suggest that identification data of the nucleic acid markers are stored in any type of database. The WO '548 reference is now rejected in view of the secondary reference of Hoshino et al. for its teachings of comparing the identified security elements with those stored in a computer, and databases are well known software means for storing a plurality of information in a computer. See discussion in section 6 below.

Applicant argues that, as to claims 2-3, the polyurethane is used with "bodies" which are used to protect the nucleic acid marker. The Examiner notes that the claims broadly require mixing with media, which is met by the WO '548 reference.

As to claim 11-12, Applicant argues that the dying process of paragraph [0018] is for making the bodies, not for coloring the fiber. The Examiner disagrees because paragraph [0018] of Rancien et al. states "after the fibers have been made by a dying or other method."

As to use of RNA, Applicant argues that Rancien et al. does not disclose or suggest using RNA as a marker unlike the instant specification. The Examiner maintains the position that it would have been obvious to have similarly used RNA since WO '548 is generally directed to the use of nucleic acid and because RNA is commonly known to be the other nucleic acid (see paragraph [0042] of Rancien et al.) and is commonly used for authenticating materials in a similar fashion as DNA – see the references previously cited, such as the Sheu et al. references.

As to Applicant's arguments regarding spraying, the Examiner notes that claim 37 merely requires spraying onto the marker and does not require spraying naked DNA as Applicant argues.

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Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 56, the limitation “high length to width ratio” is vague and indefinite because the metes and bounds of this limitation are unclear. This phrase is not defined in the specification, and one skilled in the art would be unable to determine what the metes and bounds of “high” are and whether they are infringing upon the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-27, 37, 39, 41-43, and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/057548 A1 in view of Hoshino et al. (US 5,602,381).

It is noted that US 2004/0063117, hereinafter “Rancien et al.,” previously cited, is used as a working English translation of WO 02/057548, and that the paragraph numbers cited are those of the US 2004/0063117 (Rancien et al.) English-language reference.

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With respect to independent claims 1, 11, and 20, WO '548 discloses a method for authenticating an object, particularly for authenticating paper intended for serving as the medium of works of art or other documents of value (see paragraph [0005] of Rancien et al.). WO '548 teaches the steps of selecting a unique nucleic acid marker having a specific length and a specific sequence; selecting a media that causes said marker to adhere to a fibrous material (see paragraph [0033] of Rancien et al.); mixing said media with said marker to generate a nucleic acid marker mixture; applying said nucleic acid marker mixture to fibers (see paragraph [0018] of Rancien et al.); generating a marked fibrous material by causing said nucleic acid marker mixture to adhere to said fibers; producing a paper material by using one or more marked fibers (see paragraph [0043] of Rancien et al.); and authenticating the paper material by detecting said unique nucleic acid marker in said marked fibrous material, said nucleic acid detected with primers particular to said unique nucleic acid having said specific length and said specific sequence (see paragraph [0036] of Rancien et al.).

It is noted that WO '548 is directed to making paper. However, WO '548 teaches that the biochemical marker may be incorporated into fibers made by spinning such as viscose or extrusion such as polyamide or polypropylene (paragraph [0016]). It is noted that Merriam-Webster's Collegiate Dictionary, Tenth Edition, defines "viscose" as "a viscous golden-brown solution made by treating cellulose with caustic alkali solution and carbon disulfide and used in making rayon and films of regenerated cellulose," and "rayon" as "any of a group of smooth textile fibers made from regenerated cellulose by extrusion through minute holes." Thus it is the Examiner's position that viscose meets the limitation of a "textile fiber material" as claimed, as well as does polypropylene since it is well known that polypropylene is used in preparing

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textiles. Additionally, WO '548 teaches use of its invention to make “paper for serving as the medium of works of art,” and the Examiner notes that the medium of works of art is often on canvas. Canvas is a textile material that is similarly formed from fibers. It is the Examiner’s position that one having ordinary skill in the art would have been motivated to similarly form a canvas material instead of paper with the marked fibers produced by the process of WO '548 upon seeing WO '548’s teaching that it is desirable to authenticate the medium of works of art. Further, one would expect similar results because the manufacture of a textile and paper would both be formed from marked fibers, and the only difference is a subsequent knitting/weaving process in place of a mass papermaking process.

Rancien et al. lacks a teaching that the identification data of the unique nucleic acid marker is stored in a data base. The secondary reference of Hoshino et al. is cited for its teaching of similarly marking and authenticating paper material using magnetic elements instead of biological/nucleic acid markers. Hoshino et al. teaches that once the magnetic elements are detected, they are compared with a code recorded in “code storage area” of a computer (col. 8, line 41 to col. 9, line 15). It would have been obvious for one having ordinary skill in the art to have similarly incorporated a step of comparing the detected nucleic acid marker with those stored in a computer in the process of WO '548 in order to verify the authenticity of the detected nucleic acid marker. It is the Examiner’s position that it would have further been obvious to have stored the nucleic acid markers for a plurality of documents/items to be verified within a database because databases are well known software means for storing a large amount of data on a computer.

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As to claims 2-3, WO '548 discloses use of polyurethane as the media (see paragraph [0033] of Rancien et al.), which is a polymer.

As to independent claim 11 and claim 12, WO '548 teaches that the marker mixture may be applied to the fibers after they are made by a dyeing process (see paragraph [0018] of Rancien et al.).

As to claims 4-5, 13-14, 21-22, it is noted that a canvas used for painting is a product manufactured from fibrous materials, and may be considered a home or consumer product.

As to claims 6-7, 15-16, 23-24, WO '548 teaches use of DNA as the nucleic acid. However, it would have been obvious to have similarly used RNA since WO '548 is generally directed to the use of nucleic acid and RNA is commonly known to be the other nucleic acid (see paragraph [0042] of Rancien et al.).

As to claims 8-10, 17-19, 25-27, WO '548 teaches that the nucleic acid marker of its invention helps to identify and authenticate an object. It would have been well within the skill of an ordinary artisan to have associated the DNA marker with a plurality of product information such as the product's origin or supply chain or manufacturing information as the purpose for the DNA marker.

As to independent claim 37, WO '548 teaches spraying (see paragraph [0079] of Rancien et al.), and application on fibers (see paragraphs [0018]-[0019] of Rancien et al.). As to claims 39 and 41, WO '548 generally discloses that the DNA marker fluid may be applied at any stage during production of a fiber or after a fiber has been made, as well as during the paper-making step. It would have similarly been obvious to have sprayed the DNA marker fluid during a knitting/weaving process step in the process of making a textile material, as discussed above,

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with the expectation of successful results since WO '548 generally discloses addition of the marker fluid at any point during production. As to claim 42, WO '548 is silent with respect to the use of rayon as the fiber. However it would have been obvious for one having ordinary skill in the art to have selected other fibrous materials for the production of a canvas material as a matter of design preference with the expectation of similar and successful results.

As to new claim 56, the fibrous textile material of WO '548 may have a mean length of 5 mm and diameter of 25 micrometers (paragraph [0063]), which meets the limitation of a "high length to width ratio."

As to new claim 57, it is the Examiner's position that it would have been obvious to one having ordinary skill in the art to have used a nucleic acid marker of plant-based origin with the expectation of similar and successful results because it is well known that nucleic acid markers may be plant or animal or synthetically derived, among other origins.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/
Primary Examiner, Art Unit 1715

kcj